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IMMUNE CHECKPOINTS INDOLEAMINE 2,3-DIOXYGENASE 1 AND PROGRAMMED DEATH-LIGAND 1 IN ORAL MUCOSAL DYSPLASIA. *MS. MERI SIEVILÄINEN[A], DR. FABRICIO PASSADOR-SANTOS[B], MS. RABEIA ALMAHMOUDI[A], MR. SOLOMON CHRISTOPHER[A], DR. MARIA SIPONEN[C], DR. SANNA TOPPILA-SALMI[A], PROF. TUULA SALO[A], DR. AHMED AL-SAMADI[A]. [A] UNIVERSITY OF HELSINKI, [B] SÃO LEOPOLDO MANDIC RESEARCH CENTRE, [C] KUOPIO UNIVERSITY HOSPITAL*

Objectives: Oral mucosal dysplasia is a potentially malignant disorder that is associated with risk of transformation to carcinoma. During malignant transformation, dysplastic cells escape from immune-mediated destruction. We hypothesized that adaptive immunity is inhibited by activation of distinct immune checkpoint molecules, such as indoleamine 2,3-dioxygenase 1 (IDO1) and programmed death-ligand 1 (PD-L1). We collected 64 oral dysplasia samples from 47 patients. Nine biopsies from alveolar mucosa during wisdom teeth extractions were used as healthy controls. Tissue samples were stained and scored for IDO1 and PD-L1. Additionally, dysplasia grades and inflammatory cell infiltration were evaluated. Nine patients were followed up to 36 months to evaluate dysplasia progression, inflammation, and immune checkpoint molecule expression.

Findings: Dysplastic epithelium had significantly lower IDO1 expression than that of healthy controls. Cells positive for PD-L1 in the lamina propria were mainly in dysplastic samples and seldom in healthy controls. Dysplasia grade associated negatively with epithelium IDO1 and positively with IDO1 and PD-L1 expression in the lamina propria. There was a positive association between dysplasia grade and level of inflammatory cell infiltration. During follow-up, dysplasia grade, inflammatory cell infiltration, and the immune checkpoint expression fluctuated over time.

Conclusions: The immune checkpoint molecules IDO1 and PD-L1 are modulated during oral epithelial dysplastic changes and their expression is associated with inflammatory cell infiltration in the lamina propria. As immune checkpoint molecule expression fluctuates over time, these molecules are not useful as biomarkers for oral mucosal dysplasia progression.

KNIEST SYNDROME: CASE REPORT AND REVIEW OF LITERATURE. *DR. TANIA JHAMB, DR. HAYAT MASOOD, DR. EMILE ROSSOUW. EASTMAN INSTITUTE FOR ORAL HEALTH, UNIVERSITY OF ROCHESTER*

Background: Kniest syndrome (dysplasia) is a rare autosomal dominant chondrodysplasia that is characterized by distinct musculoskeletal and craniofacial irregularities. These abnormalities result from a mutation of the collagen type II gene (COL2A1) resulting in an abnormal type II collagen product. Craniofacial abnormalities seen in this syndrome include prominent eyes, flat nasal bridge, cleft palate, midface anomalies, tracheomalacia, and hearing loss. This report illustrates a case of Kniest syndrome with severe dentoskeletal malformation with cleft palate treated at Eastman Institute for Oral Health. In addition, the report also outlines clinical, histopathological and radiographic findings of the condition with a review of literature of Kniest syndrome.

Method: Case study of a 16 year old male with a history of Kniest syndrome presented to the Orthodontic clinic seeking treatment for misaligned teeth. The patient showed clinical features of this syndrome which included dwarfism, severe midface hypoplasia, flattened and rounded face with prominent eyes and nasal atresia. Patient had a history of cleft palate repair. Intraoral findings included severe gingival hyperplasia, high arched palate and abnormal dentoalveolar development.

Conclusion: Kniest syndrome (dysplasia) is a rare chondrodysplasia with differential diagnosis that can include Spondyloepiphyseal dysplasia, Spondyloepimetaphyseal and Metatropic dwarfism. In addition to genetic testing, distinct radiographic features and histopathological studies are crucial in determining the proper diagnosis of the condition.

VALIDATION OF A FOUR PROTEIN SIGNATURE FOR DETERMINING LYMPH NODE METASTASIS AND SURVIVAL IN ORAL SQUAMOUS CELL CARCINOMA IN 3 MAIN DIAGNOSTIC CENTERS IN MALAYSIA. *DR. FAIRUZ ABDUL RAHMAN[A], DR. ANAND RAMANATHAN[A], DR. LAU SHIN HIN[B], DR. GEORGE BOEY TEIK FOO[C], PROF. SOK CHING CHEONG[D], DR. NOOR AKMAR NAM[E], PROF. ROSNAH MOHD ZAIN[F]. [A] UNIVERSITY OF MALAYA, [B] INSTITUTE FOR MEDICAL RESEARCH, MALAYSIA, [C] QUEEN ELIZABETH HOSPITAL, KOTA KINABALU, SABAH, [D] CANCER RESEARCH MALAYSIA, [E] UNIVERSITI SAINS ISLAM MALAYSIA, [F] MAHSA UNIVERSITY; ORAL CANCER RESEARCH AND COORDINATING CENTRE, UNIVERSITY OF MALAYA*

Introduction: Despite advances in screening and detection tools, the overall accuracy for current pre-operative assessment of regional lymph node (LN) metastasis is still limited with low sensitivity (70%) having a false negative rate of 30%.

Objectives: To validate the previous study (Zanaruddin et al. 2013) that has identified 4-protein signature (EGFR, HER2/neu, LAMC2 and RHOC) in primary oral squamous cell carcinoma (OSCC) that could reliably distinguishes patients with and without LN metastasis.

Method: A total of 83 cases of OSCC samples, their socio-demographic and clinic-pathologic data were collected from three centers. Four proteins (EGFR, HER2/neu, LAMC2 and RHOC) expression were evaluated using immunohistochemistry based on the intensity and percentage of staining.

Results: All four proteins evaluated, were found to be significantly associated with the presence of LN metastasis.